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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/009,875 | 09/19/2002 | Johannes Eschler | 10191/2188 | 4819 |

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| EXAMINER | |
|---|---|
| LEFLORE, LAUREL E | |
| **ART UNIT** | **PAPER NUMBER** |
| 2673 | |

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/009,875 | ESCHLER ET AL. | |
| | Examiner | Art Unit | |
| | Laurel E LeFlore | 2673 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 11-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 11-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 19 September 2002 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 9/19/02.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 160. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The substitute specification filed 19 September 2002 has been entered.

3. The disclosure is objected to because of the following informalities: Page 5, lines 22-23, discloses "control 190...for assigning operating states of device 195". However, figure 1 depicts element 195 as being a "control for assigning operating states".

Appropriate correction is required.

### *Claim Objections*

1. Claim 20 is objected to because of the following informalities: In line 2 of claim 20, "wherein spherical operating element" should be "wherein the spherical operating element". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11-16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Schuler et al. 5,889,672.

5. In regard to claim 11, Schuler discloses an operating device for an electrical device comprising a spherical operating element mounted for rotation about at least one axis. See figures 7-10 and column 9, lines 1-2, disclosing, "In this illustrative embodiment a trackball 500 is implemented".

Schuler further discloses an arrangement configured to influence torque for rotating the spherical operating element about the at least one axis. See column 9, lines 46-48, disclosing, "At least one drive/position assembly 516 is configured to apply torque and sense position along a respective one of mutually orthogonally disposed axes". Further see column 9, lines 65-67, disclosing, "a first drive/position assembly 516 is positioned with the gripping members of its wheel set in contact with the ball".

6. In regard to claim 12, Schuler discloses that the arrangement includes at least one plunger that is pressed against the spherical operating element with a predefinable

force. See the rejection of claim 1 and, for example, figure 10. Note that the drive/position assembly 516 (as well as 516', 520 and 520') is configured to apply torque and is in contact with the ball. Thus, this drive/position assembly as a plunger, as it presses in and out of the ball with varying force.

7. In regard to claim 13, Schuler discloses that the arrangement includes at least one actuator which, in response to a motion of the spherical operating element, generates a predefinable torque that counteracts the motion of the spherical operating element. See rejection of claim 1. Further see column 10, lines 53-64, disclosing, "The user interface device 500 includes at least a first and second drive/position assembly 516, 516' each with a servo motor 534 and encoder 536 and associated first and second complementary slave assemblies 520, 520' for respectively sensing y-axis and x-axis ball movement to be translated into a cursor position on the display...In the present application each servo motor 534 is not used as a motor per se, but rather as a torque controller." Also see column 11, lines 23-24 and 29-31, disclosing that the torque is predefinable, "The microprocessor 538 accesses torque profile information...The torque profile information provides an indication of a torque or force to be applied by/to the motor."

8. In regard to claim 14, see rejection of claim 13 and figures 7-10, in which Schuler discloses that the at least one actuator includes an electromotor having a corresponding activation circuit an having a shaft, and a roll frictionally engaged with the spherical operating element, the roll being situated on the shaft of the electromotor.

9. In regard to claim 15, Schuler discloses that the arrangement blocks a rotation of the spherical operating element about at least one of the at least one axis by increasing the torque needed for rotating the spherical operating element. See column 7, lines 54-56, disclosing, "progressively increasing torque in one direction or another or increasing torque to a point of a pseudo hard stop, can be achieved according to the invention by introducing a torque profile which results in an appropriate current applied to the servo motor."

10. In regard to claim 16, Schuler discloses that the spherical operating element includes a first partial element rotatable about a first axis, and a second partial element rotatable about a second axis, the second axis being perpendicular to the first axis. See figure 10, depicting the spherical operating element's first and second drive/position assemblies 516, 516', which are each rotatable around different axes that are perpendicular to each other.

11. In regard to claim 18, Schuler discloses that the operating device is used for control of a pointer, and wherein the torque needed to rotate the spherical operating element is influenced as a function of a position of the pointer in a context. See column 3, lines 60-65, disclosing, "The torque-display position information relates a position or coordinate of a display entity or cursor on a display screen of an electronic device to a force or torque applied to the user interface device, effecting tactile responsiveness of the user interface device as a function of the display screen on which the display entity or cursor is manipulated."

12. In regard to claim 19, Schuler discloses that the context is an at least one-dimensional selection list, wherein the torque needed to rotate the spherical operating element is influenced so that moving the pointer towards an edge of the list increases the torque. See column 4, lines 13-24, disclosing, "Features of the invention include the capability to effect tactile screen boundaries, and "walls" and "troughs" which correspond to button bar functions or icon placement on a drag-down menu, by increasing and decreasing resistance to further manipulation of the interface device by the user...Cell boundaries can be defined by hard stops or "hills" which a cursor will roll off to limit access to screen areas or otherwise provide an indication of cursor position without requiring the user to look at the screen."

13. In regard to claim 20, see rejection of claim 19.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuler et al 5,889,672 in view of Jakobs et al. 5,944,151.

16. In regard to claim 17, Schuler discloses an invention similar to that which is being claimed in claim 17. See rejection of claims 11 and 16 for similarities. Note in the rejection of claim 11 that Schuler does discloses a first partial element that is a sphere

(trackball 500). Schuler does not disclose a second partial element that is a hemisphere that partially surrounds the first partial element.

Jakobs discloses an operating device in which a second partial element is a hemisphere that partially surrounds a first partial element. See figure 6 and column 50-54, disclosing, "The embodiment of FIG. 6 has an actuating element which also comprises the braking element. In this case there are provided individual shells 41 and 42 which engage in one another and are guided with respect to each other by tongue-and-groove-like guide rails 43 and 44".

Jakobs further teaches in column 5, line 60 to column 6, line 5, "By the provision of several such internested shells with corresponding guide rails which extend in different directions, haptic return effects in different directions of movement can be obtained. In this connection, the forces which are required in order to operate such an actuating element are less than in the case of a rotary knob, since the force of engagement with the hand is less. The advantage of such a haptically programmable actuating element is the possibility of a rapid and targeted movement of a cursor in a picture screen menu since movements of the operating element which do not correspond with the menu can be excluded on basis of the program."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the spherical trackball of Schuler by having a second partial element that is hemispherical surrounding it, as in the invention of Jakobs. One would have been motivated to make such a change based on the teaching of Jakobs that "By the provision of several such internested shells with corresponding guide rails

which extend in different directions, haptic return effects in different directions of movement can be obtained" and further that such an arrangement is preferable to a rotary knob and further that "The advantage of such a haptically programmable actuating element is the possibility of a rapid and targeted movement of a cursor in a picture screen menu since movements of the operating element which do not correspond with the menu can be excluded on basis of the program."

***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al. 5,914,705 discloses an invention in which reads upon at least the independent claim of the immediate application.

Eleyan et al. 6,144,370 discloses a trackball with a regulator that is dependent on a cursor location.

Rosenberg et al. 6,211,861 B1 discloses an invention which reads upon at least the independent claim of the immediate application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LEL
13 September 2004

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